CLAIMS

What is claimed is:

1. Apparatus of connecting a secondary power source to electrical loads that are designated for removal from a primary power source during times requiring load reduction, comprising:

a remotely controllable secondary load reduction transfer switch;

logic that enables the remotely controllable secondary load reduction transfer switch to operate only when primary power is available and when commanded to do so; and

a command process for sending a command for one or more remotely controllable secondary load reduction transfer switches that is transferred to the logic of the one or more remotely controllable secondary load reduction transfer switches to cause them to connect a secondary power source to electrical loads coupled thereto that are designated for disconnection from the primary power source during times requiring load reduction.

2. The apparatus recited in Claim 1 wherein the secondary power source comprises a standby power generator.

3. The apparatus recited in Claim 1 wherein the remotely controllable secondary transfer switch is wirelessly controlled.

4. The apparatus recited in Claim 1 wherein the command process substantially simultaneously commands a plurality of remotely controllable secondary load reduction transfer switches to cause them to connect a secondary power source to electrical loads coupled thereto that are designated for disconnection from the primary power source during times requiring load reduction.

5. The apparatus recited in Claim 1 wherein the logic and command process are operative to locally measure the electrical load, and automatically transfer selected loads to the secondary power source via the secondary load reduction transfer switch if power demand approaches a threshold set by a user.

6. The apparatus recited in Claim 1 which comprises a plurality of remotely controllable secondary load reduction transfer switches and logic that enables the plurality of remotely controllable secondary load reduction transfer switches.

7. An electrical power distribution system comprising:

a primary power source;

an electrical breaker panel that distributes power to a plurality of loads comprising non-critical loads, critical loads, and load reduction loads;

a secondary power source;

an automatic transfer switch for distributing power to the critical loads from the secondary power source if power is not available from the primary power source;

a load reduction transfer switch, wired in parallel to the automatic transfer switch, for distributing power to the load reduction loads to reduce power demand on the primary power source.

8. The system recited in Claim 7 wherein the automatic transfer switch is designed to connect its critical loads to the secondary power source only in the absence of power from the primary power source.

9. The system recited in Claim 7 wherein the load reduction transfer switch is designed so that it cannot normally connect the standby power generator to the load reduction loads in the absence of power from the primary power source.

10. The system recited in Claim 7 wherein operation of the automatic transfer switch and load reduction transfer switch are mutually exclusive.

11. The system recited in Claim 7 wherein the load reduction transfer switch allows the secondary power source to power the load reduction loads while power from the primary power source is available, independently from the critical loads that are powered by the secondary power source in the case of loss of power from the primary power source.

12. The system recited in Claim 7 wherein the automatic transfer switch includes control logic circuitry comprising:

a two position contactor operative such that in one position, the breaker panel is connected to the primary power source, and in the other position, the breaker panel is connected to the secondary power source; and

a transfer switch control circuit that (1) senses the presence or absence of voltage from primary power source, and if the voltage is lost, provides a start signal to the secondary power source, causing it to begin producing power, (2) monitors power produced by the secondary power source, and when a stable voltage and frequency are reached, initiates transfer of power to the loads from the primary power source to the secondary power source; and (3) selectively controls an actuator via a control signal to cause the power transfer from the primary power source to the secondary power source and vice-versa

13. The system recited in Claim 7 wherein the load reduction transfer switch includes control logic circuitry comprising:

a two position contactor operative such that in one position, the breaker panel is connected to the primary power source, and in the other position, the breaker panel is connected to the secondary power source;

a transfer switch control circuit that (1) senses the presence or absence of voltage from the primary power source, and if the voltage is lost, provides a start signal to the secondary power source, causing it to begin producing power, (2) monitors power produced by the secondary power source, and when a stable voltage and frequency are reached, initiates transfer of power to the loads from the primary power source to the secondary power source; and (3) selectively controls an actuator via a control signal to cause the power transfer from the primary power source to the secondary power source and vice-versa; and

a load reduction control circuit for receiving a command that applies power from the primary power source to an actuator that breaks connection of the voltage to the transfer switch control circuit and initiates startup of the secondary power source, the transfer of power to the load reduction loads, and that keeps the transfer switch from operating if power from the primary power source is absent.

14. The system recited in Claim 13 wherein the load reduction control circuit comprises a wireless load reduction control circuit.

15. The system recited in Claim 7 wherein the load reduction transfer switch is operative to locally measure electrical load, and automatically transfer selected loads to the secondary power source via the load reduction transfer switch if power demand approaches a threshold.

16. The system recited in Claim 7 which comprises a plurality of load reduction transfer switches that transfer selected loads to the secondary power source.

17. A method of providing load reduction in a system that supplies power from a primary power source to multiple sets of loads and supplies power from a secondary power source by way of a first transfer switches to a subset of critical loads if power from the primary power source is unavailable, the method comprising the steps of:

coupling a remotely controllable second transfer switch between the secondary power source and a subset of load reduction loads that are to be disconnected from the primary power source during times requiring load reduction; and

remotely controlling the second load reduction transfer switch to supply power from the secondary power source to the subset of load reduction loads in lieu of supplying power from the primary power source when power from the primary power source is available and during times requiring load reduction.

18. The method recited in Claim 17 wherein the step of remotely controlling the second load reduction transfer switch comprises the step of substantially simultaneously controlling a plurality of second load reduction transfer switches to cause them to connect one or more secondary power sources to one or more subsets of load reduction loads respectively coupled thereto that are designated for disconnection from the primary power source during times requiring load reduction.

19. A method of providing load reduction in a system that supplies power from a primary power source to multiple sets of loads, comprising the steps of:

coupling a first transfer switch between the primary power source and the loads, and between a secondary power source and a subset of critical loads;

coupling a remotely controllable second transfer switch between the primary power source and the loads, and between the secondary power source and a subset of load reduction loads that are to be removed from the power grid during times requiring load reduction;

remotely controlling the first transfer switch to supply power from the secondary power source to the subset of critical loads if power from the primary power source is unavailable; and

remotely controlling the second load reduction transfer switch to supply power from the secondary power source to the subset of load reduction loads in lieu of supplying power from the primary power source thereto when power from the primary power source is available and during times requiring load reduction.

20. The method recited in Claim 19 wherein the step of remotely controlling the second load reduction transfer switch comprises the step of substantially simultaneously controlling a plurality of second load reduction transfer switches to cause them to connect one or more secondary power sources to one or more subsets of load reduction loads respectively coupled thereto that are designated for disconnection from the primary power source during times requiring load reduction.